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AUTHOR Bertram, Charles
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ABSTRACT

The major objective of this report is to discuss (1) the demography of the Beckley, W. Va., area field-test site; (2) the socioeconomic status of the children involved in the Appalachia Preschool Education Program wherein 3-, 4-, and 5-year-olds were divided into 3 treatment groups (those who received instruction via the TV program, a paraprofessional home visitor, and a mobile classroom; those who received instruction via the TV program and home visitor; and those who received instruction via the TV program only) with a control group; and (3) the developmental costs of the field study conducted during the 1968-71 school years. Reported conclusions and implications are that the 8 counties served by the program were all more rural than the state average; that 75% or more of fathers and 85% or more of mothers of children in the program had completed high school; that most of the children involved in the field test were rural residents; that families from all treatment and control groups were similar; and that developmental costs for the program totaled about $250,000 for each of the final 2 years of the field test and slightly less than that the first year. Tables provide the demographic and socioeconomic data as well as cost and personnel data. (PS)

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Division of Research and Evaluation
Appalachia Educational Laboratory, Inc.
Box 1348
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by

Charles Bertram, Director
Research and Evaluation

and

Randolph MacDonald, Associate Educational Development Specialist
Research and Evaluation

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Demographic and Socioeconomic Data of the Beckley, W.Va., Area and 1968-71 Development Costs of AEL's Preschool Education Field Study

This report was prepared in an effort to provide the reader with insight into the following:

- The demographic profile of the Beckley, W.Va., field test site.
- The socioeconomic status of the children involved in the Appalachia Preschool Education Program.
- The developmental cost of the field study during the school years from 1968 to 1971.

Demographic Information about the Eight-County Field Test Area

The Appalachia Preschool Education Program instructional television program was broadcast from the Oak Hill, W.Va., television station to a surrounding eight-county area. The eight counties were Fayette, McDowell, Mercer, Monroe, Nicholas, Raleigh, Summers, and Wyoming. The children who received one or more components of the Appalachia Preschool Education Program and who participated in the evaluation of the program lived in the counties of Fayette, Mercer, Raleigh, and Summers.

According to the U.S. Census Bureau, the 1970 population of West Virginia was 1,744,237 -- a decrease of 6.2 percent from the 1960 population. As indicated in Table 11.1, the population in the eight counties ranged from 70,080 in Raleigh County to 11,272 in Monroe County.

The Appalachia Preschool Education Program was designed for areas which are sparsely populated. Therefore, the urban-rural composition of the region was of interest. The U.S. Census Bureau generally considers

an urban resident to be one who lives in a town of 2,500 or greater population. By the U.S. Census Bureau standards, West Virginia was 61.0 percent rural in April of 1970. The county with the greatest percentage of rural residents was Monroe (100 percent), and the county with the lowest percentage of rural residents was Mercer County with a 63.3 percent rural population.

The average effective buying income per household in 1968 was $6,950 for West Virginia. The range for the eight-county area was from $5,847 in Monroe County to $6,696 per family in Fayette County. The average per capita income in West Virginia in 1968 was $2,610. The range of per capita income averages within the eight-county area was from $1,958 in Monroe County to $2,798 in Raleigh County.

According to the data presented in Table 11.1, 30.6 percent of the adults age 25 and over in West Virginia had completed high school in 1968. The average for all counties within the eight-county area (except Mercer) was below the state average, and the range within the eight counties was from 19.3 percent in Wyoming County to 31.6 percent in Mercer County. According to the U.S. Census Bureau, 55 percent of the adults 25 years of age or older in the nation have completed high school. The number of teachers and the number of administrators in each county of the eight-county area also are listed in Table 11.1.

Since the Appalachia Preschool Education Program was designed for children of ages 3, 4, and 5, the number of children of those ages living in rural areas was estimated for each of the eight counties. The estimations are based upon a preliminary release of the 1970 U.S. Census data and should be very close to the actual count when it is available.

According to Table 11.2, as of April, 1970, there were an estimated 54,470 children of ages 3, 4, and 5 living in the rural areas of West Virginia. That number represented 61 percent of the total number of children of those ages within the state. Of the total, an estimated 17,593 were 3 years of age, 18,146 were 4 years of age, and 18,731 were 5 years of age. Of the eight counties McDowell had the largest number of rural children of ages 3, 4, and 5 (2,652), and Raleigh was a close second (2,526). The counties with the fewest rural children of those ages were Summers (380) and Monroe (511).

A previous study indicated that there were 1.66 children per family in West Virginia (Hooper and Marshall, 1968, p. Q-21). If the Appalachia Preschool Education Program reached all rural families in West Virginia, approximately 32,813 families would be served. In the eight-county region, 7,737 rural families would have children in the program.

Socioeconomic Information about the Parents of Children in the Appalachia Preschool Education Program

A socioeconomic survey of the parents of the children in the three treatment groups was conducted during the spring of 1970. The survey was similar

to that conducted by Hooper and Marshall (1968) so that similarities between the program parents and a cross section of Appalachian parents used by Hooper and Marshall might be identified. The two sets of parents were similar, and detailed findings will not be presented here. However, data from five of the socioeconomic survey items are presented in Table 11.3 by treatment groups. The first of three treatment groups under consideration was comprised of children who received the television program, a paraprofessional home visitor, and a mobile classroom (TV-HV-MC); the second group received the TV program and home visitor (TV-HV); and the third group received the TV program (TV only). The purpose in presenting these data is to compare the socioeconomic backgrounds of children in the three treatment groups and also to compare these children with the larger regional and state populations from which they were drawn.

Based on the Bureau of the Census definitions, 84 percent of the TV-HV-MC, 67 percent of the TV-HV, and 100 percent of the TV only groups lived in rural areas. All groups were more rural than the state average of 61 percent, and they were more rural than the average for two of the four counties from which the children were drawn (Table 11.1).

As shown in Table 11.3, the majority of both parents in every group had completed high school. The proportions who had done so are somewhat surprising when compared with the percentages of West Virginia adults with high school educations (Table 11.1). For the state as a whole, slightly more than 30 percent of adults have attained 12 years of schooling. By comparison, the percentage of high school graduates among fathers of children in the AEL program ranged from 78 percent to 96 percent, and for mothers of those children, the figures ranged from 91 percent to 93 percent. An important reason for this difference, of course, is the fact that these parents are younger than the average adult. However, even allowing for age differences, there may still be a selective factor operating. Parents who have more education themselves ordinarily value it more highly and seek opportunities for their children to receive it.

A large number of the families owned a color television set. The percentages were 42 for the TV-HV-MC group, 47 for the TV-HV group, and 36 for the TV only group. The parents were asked how much time their children spent viewing television each week. The most frequent response for the TV-HV-MC and TV-HV group was two to three hours per day, and the most frequent response for the TV only group was one hour per day. The different categories of responses were weighted and a mean number of hours per day spent watching television by the children was calculated. The mean for children in the TV-HV-MC group was 3.14 hours per day; for the TV-HV group the figure was 2.88 hours per day. The mean for the TV only group was 1.16 hours per day, or about one third of the time spent by the children who received only a home visitor and/or a home visitor and mobile classroom.

The average family income for parents of the TV-HV-MC group of children was $7,359, and $7,192 for the parents of the TV-HV children. The

TV only parents reported an average family income of $7,667, which was the highest of the three treatment groups.

Social Class Standing

A number of recent research studies--most notably that of James S. Coleman and his colleagues (Equality of Educational Opportunity, 1966)--have shown that the home background of a child is the most reliable indicator of his subsequent success in school. Although "home background" is not precisely defined and obviously involves a number of factors, it is clearly related to family educational level and income. Failure to take these effects into account in analyzing the outcomes of a program such as the Preschool Education Program can seriously impair the meaningfulness of the findings.

For these reasons, a measure was taken of the socioeconomic standing of families of children in the three treatment groups and one control group. The procedure used was that developed by August B. Hollingshead (Two Factor Index of Social Position, 1957).

Socioeconomic data were collected on a mail back form designed by the Laboratory. The questions pertained to community size, education of parents, occupation, and family income. The data were coded so that Hollingshead's Two Factor Index of Social Skills could be computed for each head-of-household, and it was used to compare the background of the different treatment groups. The index developed by Hollingshead uses educational attainment and occupation of the head of household, differentially weighted, to compute a score which then is translated into an index of social class. The index value and a corresponding range of scores for each social grouping are shown below.

Social Class	Social Class Index Value	Range of Scores
Upper	1	11-17
Upper Middle	2	18-27
Middle	3	28-43
Lower Middle	4	44-60
Lower	5	61-77

A summary of the results of this analysis by treatment and control group is shown in Table 11.4. The social class index values were similar for all four groups and ranged from 3.49 for the control group to 4.07 for the TV only group. Since a lower index value indicates higher social standing, the control group families were the highest on this measure of the four groups. These means were not statistically different from one another, however, as judged by the Kruskal-Wallis test (H=2.29). Some caution must be exercised in interpreting these findings because of the relatively small proportion of families from the TV-HV and TV only groups

for which data were available. Twenty-six percent of the TV-HV families and 41 percent of the TV only families were included in the analysis. However, the two groups of greatest interest were well represented in the sampling. Seventy-two percent of the TV-HV-MC families were included, and 93 percent of the control families were assessed.

Number of Staff and Developmental Cost of the Three-Year Field Study (1968-69, 1969-70, and 1970-71)

The Appalachia Preschool Education Program is comprised of three components. The first component involved the production of curriculum materials, including television lessons which were broadcast daily from the Oak Hill, W.Va., station, WOAY-TV. The second component of the program pertained to home visitation by paraprofessionals on a once-a-week basis. The third component was a mobile classroom, which the children visited once each week. Staffing and program costs have been prorated over these three components according to the time and money spent on each. (In the 1970-71 program evaluation report, these same costs were prorated according to whether activities were associated with production of materials in a central location, or had to do with field activities.)

Staffing requirements for the three program components for each year of the field test are given in Table 11.5. The program was being initiated during the 1968-69 school year, and not all of the listed positions were filled at the beginning of that year. Eight home visitors were required each year in order to visit the homes of children in the field test sample. If the children visit the mobile classroom for one hour and a half each week, one mobile classroom per 150 children is required. One teacher and one aide were required to operate the facility for the 150 children who used it. The total number of professional personnel required for the field test was 7.66 during 1968-69, 9.97 during 1969-70, and 9.30 in 1970-71. Nine paraprofessionals and between 3.25 and 4.00 clerical and support personnel were required each year. In addition, a program director and one half of a secretary's time (considered administrative) were required each year.

The actual cost of the program for field test operations during the 1968-69, 1969-70, and 1970-71 school years is listed in Table 11.6. The costs were prorated across the three components of the program, as were the personnel in the preceding table. Certain equipment (which might normally be considered capital outlay) was amortized over a five-year period. Certain of the 1968-69 costs are estimates (e.g., travel) because the accounting system in use at the time did not assign costs to program components. In general, costs of television production would remain about the same whether the program was operated for 150 children or 150,000 children. Home visitation and mobile classroom costs must be examined item by item to determine which ones vary with the number of children to be served and which costs are relatively stable. For example, the cost for home visitors, mobile classroom teacher, mobile classroom, and office rental

will vary directly according to the number of children to be served, but certain professional personnel, such as an instructional monitor, would not be required for each group of 150 children.

Conclusions and Implications

This report has presented data related to the demographic, economic, and social characteristics of West Virginia and more particularly of an eight-county region in the southern part of the state from which children involved in the field test of the Appalachia Preschool Education Program were drawn. This section will briefly summarize the findings reported.

- The eight counties are all more rural than the state average; seven of them averaged less per capita income in 1968 than the state as a whole; and in seven a smaller proportion of adults had finished high school.

- Three fourths or more of fathers and 85 percent or more of mothers of children in the program had completed high school; by comparison only slightly more than 30 percent of all adults in the state in 1968 had finished high school.

- Most of the children involved in the field test of the Appalachia Preschool Education Program were rural residents, although about one third of the children in the TV-HV group came from communities of 2,500 or more people.

- On a scale of social standing, families from all treatment and control groups were similar, ranking between middle and lower middle class.

- Developmental costs for the Preschool Education Program totaled about $250,000 for each of the final two years of the field test and slightly less than that the first year.

Table 11.1

Demographic Information about West Virginia and Eight-County Preschool Field Test Area

	W.Va.	Fayette	McDowell	Mercer	Monroe	Nicholas	Raleigh	Summers	Wyoming
Total population*	1,744,237	49,332	50,666	63,206	11,272	22,552	70,080	13,213	30,095
Rural population*	1,064,746***	42,808	46,517	40,032	11,272	18,835	50,196	8,710	27,128
Percent rural	61.0	86.8	91.8	63.3	100	83.5	71.6	65.9	90.1
Percent population change (1960-1970)*	-6.2	-20.1	-29	-7.3	-2.7	-11.3	-10	-15.5	-13.6
Population per square mile*	72	74	95	152	24	35	116	38	60
Effective buying income per household (1968)*	average $6,950	6,696	5,931	6,364	5,847	5,869	6,056	6,074	6,562
Per capita personal income (1968)**	$2,610	2,609	2,255	2,162	1,958	2,284	2,798	2,340	2,153
Adults age 25 and over completed high school (%) (1968)**	30.6	21.4	19.8	31.6	25.9	21.1	26.4	22.2	19.3
Number of administrators, supervisors, etc. (1969-70)		73	77	81	15	36	100	23	57
No. of teachers (1969-70)		605	600	550	85	210	735	115	365

*1970 Census of Population, Advance Report.
**Ranking of the Counties, 1971, p. 28., West Virginia Education Association, April, 1970.
***Urban residents live in area of 2,500 or greater population (U.S. Census Bureau), and rural residents live outside those urban areas.

Table 11.2

Number of 3-, 4-, and 5-Year-Old Children in Rural West Virginia and in Eight-County Field Test Area by County

	Total Population* (all ages)	Rural Population (all ages)	% Rural**	Estimated Rural*** of age 3	4	5	Total
West Virginia Total							
	1,744,237	1,064,746	61	17,593	18,146	18,731	54,470
Eight-County Field Test Area							
Fayette	49,332	42,808	86	623	642	717	1,982
McDowell	50,666	46,517	91	858	885	909	2,652
Mercer	63,206	40,032	63	704	726	653	2,083
Monroe	11,272	11,272	100	163	168	180	511
Nicholas	22,552	18,835	83	346	357	375	1,078
Raleigh	70,080	50,196	71	840	867	819	2,526
Summers	13,213	8,710	65	119	123	138	380
Wyoming	30,095	27,128	90	540	557	534	1,631
Total	310,416	245,498	79	4,193	4,325	4,325	12,843

*1970 U.S. Census figures.

**Rural is defined as not living in a town of 2,500 population or greater.

***Estimated from preliminary release of 1970 U.S. Census figures which indicated number of children in the 0-4-year-old age group (inclusive) and in the 5-6-year-old age group (inclusive). See "Interpolation of 1970 Census Data to Obtain Number of 3-, 4-, and 5-Year-Old Children Living in Rural Areas," a mimeographed paper by AEL.

Table 11.3

Data for Selected Socioeconomic Variables
by Program Treatment Group

Variable	TV-HV-MC N	TV-HV-MC %	TV-HV N	TV-HV %	TV only N	TV only %
Community Size						
Less than 2,500	52	83.9	49	67.1	33	100
2,500-25,000	10	16.1	24	32.9	0	
Completed 12th Grade						
Mother	60	90.9	61	84.8	27	93.1
Father	54	87.7	52	77.5	24	96.0
Own Color Television	27	42.2	34	47.2	12	36.4
Children's Television Viewing						
Never	1	1.5	0	0	1	1.5
A few hours per week	2	3.0	10	13.9	5	18.5
One hour per day	6	9.1	3	4.2	17	63.0
2-3 hours per day	36	54.5	34	47.2	3	11.1
4-5 hours per day	15	22.7	28	33.3	1	3.7
6-7 hours per day	4	6.1	1	1.4		
8 or more hours per day	2	3.0	0			
Approximate mean number of hours/day	3.14		2.88		1.16	
Family Income	$7,359		$7,192		$7,667	

Table 11.4

Hollingshead Two Factor Index Means, Standard Deviations, Sample Sizes, and Percentages by Treatment Groups

Measure	TV-HV-MC	TV-HV	TV only	Control
Mean ($\bar{x}$)*	3.74	3.70	4.07	3.49
S.D.	.95	.90	.83	.90
N	68	34	27	98
% of total	71.5	26.1	40.9	93.3

*Lower scores indicate higher economic (occupational) and educational attainment.

Table 11.5

Number of Personnel by Level and Component Required
for Program Development 1968-69, 1969-70, 1970-71

Program Component	Personnel Requirements		
	1968-69	1969-70	1970-71
Television			
Curriculum Materials Coordinator	.50	.33	.33
Production Manager	1.00	1.00	1.00
On-Camera Teacher	1.00	1.00	1.00
Curriculum Specialist	-	.33	.33
Research Teacher	1.00	-	-
Creative Arts Specialist	-	1.00	1.00
Artist-Photographer	-	.50	.50
Instructional Monitor	-	.33	.33
Production Assistant (half time)	.25	.25	.25
Artist's Assistant	-	.50	-
Secretaries	.67	.67	.58
Consultant Time	15 days	3 days	14 days
Cooperating Agencies - TV Station TV Production Studio			
Total Professional	3.50	4.49	4.49
Total Clerical	.67	.67	.58
Other Support	.25	.75	.25
Home Visitation*			
Curriculum Materials Coordinator	.25	.33	.33
Curriculum Specialist	.33	.33	.33
Instructional Monitor	-	.33	.33
Research Teacher	.50	.50	.50
Field Activity Coordinator	.50	.50	.16
Paraprofessional (Home Visitors)	8.00	8.00	8.00
Artist-Photographer	-	.25	.25
Production Assistant	.12	.12	.12
Secretary	1.17	1.17	1.08
Consultant Time	17 days	8 days	21 days
Cooperating Agencies - Local Employment Agency Local School Systems			
Total Professional	1.58	2.24	1.90
Total Paraprofessional	8.00	8.00	8.00
Total Clerical	1.17	1.17	1.08
Other Support	.12	.12	.12

Table 11.5 (Continued)

	1968-69	1969-70	1970-71
Mobile Classroom**			
Curriculum Materials Coordinator	.25	.33	.33
Curriculum Specialist	.33	.33	.33
Instructional Monitor	-	.33	.33
Research Teacher	.50	.50	.50
Field Activity Coordinator	.50	.50	.17
Mobile Classroom Teacher	1.00	1.00	1.00
Mobile Classroom Aide	1.00	1.00	1.00
Artist-Photographer	-	.25	.25
Secretary	1.16	1.16	1.09
Consultants	-	5 days	1 day
Production Assistant	.13	.13	.13
Total Professional	2.58	3.24	2.91
Total Paraprofessional	1.00	1.00	1.00
Total Clerical	1.16	1.16	1.09
Other Support	.13	.13	.13
Total Professional (All 3 components)	7.66	9.97	9.30
Total Paraprofessionals (All 3 components)	9.00	9.00	9.00
Total Clerical (All 3 components)	3.00	3.00	2.75
Other Support (All 3 components)	.50	1.00	.50

* Personnel allocated for home visitation provides home visits for approximately 300 children.

** Personnel required for 150 children to visit the mobile classroom once each week.

Table 11.6

Developmental Costs of the Appalachia Preschool Education Program
During the 1968-69, 1969-70, and 1970-71 Field Test Years

Program Component	Item of Program Effort	Expenditures 1968-69	1969-70	1970-71
Television	Professional Personnel	$77,950	$62,087	$67,582
	Consultants	1,500	342	1,035
	Secretarial	6,090	5,591	3,377
	Production Studio	23,000	26,840	18,400
	Broadcast Station	4,200	4,500	4,500
	*Equipment	2,888	3,174	2,179
	Supplies	17,500	11,029	8,283
	Travel	6,000	4,399	9,959
	Miscellaneous	-	149	888
	Sub-Total	$139,128	$118,111	$116,203
Home Visitation**	Professional Personnel	12,845	24,612	29,256
	Paraprofessional (Home Vis.)	27,000	27,536	31,050
	Consultants	1,700	994	1,255
	Secretarial	3,320	6,921	6,386
	Office (rent, utilities, etc.)	2,300	3,297	2,652
	Travel-Staff		2,348	2,563
	Travel-Home Visitors	6,000	5,903	5,238
	Supplies	-	2,916	1,050
	Miscellaneous	-	369	142
	Sub-Total	$53,165	$74,896	$79,592
Mobile Classroom***	Professional Personnel	23,985	33,938	39,925
	Paraprofessional (Aide)	3,375	3,731	4,166
	Secretarial	3,320	6,921	6,386
	Consultants	-	513	75
	Mobile Classroom	4,066	4,066	4,066
	Power Connections	300	300	300
	Mobile Classroom Op. & Maint.	2,500	2,144	4,215
	Power Supply	400	452	94
	Office (rent, utilities, etc.)	2,300	2,910	2,652
	Supplies	-	859	633
	Travel	1,000	1,742	2,201
	Miscellaneous	-	36	42
	Sub-Total	41,246	57,612	64,755
	Grand Total	$233,539	$250,619	$260,550

*Equipment is prorated over a five-year period.
**The reported cost for Home Visitation provides general support for one team leader, eight home visitors, and approximately 300 children.
***The reported cost for Mobile Classroom provides general support for one teacher, one aide, and approximately 150 children.

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